Chapter 6.4 POLLUTION PREVENTION (P2) and ENVIRONMENTAL MANAGEMENT SYSTEMS

Pollution Prevention

"Pollution prevention" (or P2) is recognized by the US EPA as the most cost-effective form of environmental protection because it is an environmental management strategy that emphasizes the elimination or reduction of wastes at the source of their generation. Traditional waste management techniques such as treatment, disposal, and recycling concentrate on managing wastes after they are generated. P2 focuses on the question, "why are the wastes produced in the first place?"

Wastes are essentially wasted raw materials, and P2 efforts strive to identify opportunities to conserve and use raw materials as efficiently as possible. In addition, P2 stresses the reduction of toxicity and prevention of spills and raw material/product losses whenever possible. By definition, P2 is distinguished from recycling and reuse efforts, because these management techniques involve waste handling, collection, and reprocessing into a new raw material or useable product. True P2, which often referred to as "source reduction", eliminates or reduces the need for additional waste handling and the costs associated with that process. As such, P2 can result in significant cost savings while reducing overall environmental impacts and liabilities and facilitating compliance with environmental regulations.

Environmental Management Systems

Many forward-thinking companies that understand the value of P2 have realized that the environmental impacts of their operations are not just a by-product of what they do, but an integral part of their business model that affects the very success or failure of their organization. These facilities have embraced the development of an "Environmental Management System" (EMS) to ensure that the environment is considered in all facets of the company's operations. In addition, a good EMS sets goals for implementation of P2 and other projects that will enable "continuous improvements" in the company's environmental performance year after year. Compliance with environmental regulations is assumed as a starting point for companies with an EMS in place and the EMS drives companies to focus on reducing environmental impacts rather just staying in compliance. As such, these companies are theoretically moving towards a goal of no net impact on the environment.

What Do "P2" & "EMS" Mean for Water Quality ?

P2 & EMS are good news for water quality as they offer cost-effective opportunities for reducing water contamination. P2 techniques offer excellent applications for reductions in water usage, chemical and nutrient inputs to wastewater, its treatment, and to stormwater minimization and management. EMS's will ensure that P2 techniques are considered and employed whenever possible as part of the facility's normal business process. Compliance with water quality standards will be the beginning point for EMS companies and they will strive to continuously do better than those standards.

DEQ's Office of Pollution Prevention

The Virginia DEQ's Office of Pollution Prevention (OPP) is a non-regulatory program that promotes the use of voluntary pollution prevention (P2) approaches and technologies and the use of Environmental Management Systems (EMS). OPP has developed a variety of voluntary programs and partnerships to encourage facilities that are interested in doing more than the minimum as required by regulations. These programs provide public recognition and award opportunities, assistance and even regulatory incentives for participating.

Voluntary Programs

The ***Virginia Environmental Excellence Program (VEEP***) is DEQ's program to promote the voluntary use of environmental management systems (EMS) and pollution prevention (P2). VEEP offers recognition and regulatory incentives to encourage facilities to develop and implement an EMS. For instance, wastewater treatment plants that participate in VEEP actually receive a discount on their DEQ permit fees. In addition, the DEQ's Water Quality Improvement Fund has provided assistance grants to treatment facilities that are developing EMS's through Virginia Tech's Center for Innovation & Technological Advancement. More than 400 Virginia facilities have been

designated as VEEP facilities. For more information, see http://www.deq.virginia.gov/veep.

National Partnership for Environmental Priorities is a voluntary program coordinated by EPA that targets the elimination or reduction of wastes that contain the "Waste Minimization Priority Chemicals". These 31 target chemicals are those that EPA has determined to pose the greatest threat to the environment. NPEP targets facilities that generate these wastes and encourages them to commit voluntarily to reduce them. DEQ is responsible for promotion and coordination of this program for Virginia facilities. For more information, see http://www.epa.gov/epaoswer/hazwaste/minimize/partnership.htm.

Virginia Hospitals for a Healthy Environment (VH2E) is a partnership to educate Virginia healthcare professionals about the significant environmental impacts of their industry and the many (P2) opportunities that are available to hospitals and other health care facilities. VH2E facilities are committing to (1) eliminate mercury, (2) reduce wastes, and (3) reduce the toxicity of wastes. There are currently 90 VH2E facilities and nearly 50% of the state's hospitals are in the program. For more information, see http://www.deq.virginia.gov/p2/vh2e.

Businesses for the Bay (B4B) is a voluntary team of businesses, industries, government facilities and other organizations within the Chesapeake Bay watershed. B4B's goal is to reduce releases of chemical contaminants and nutrients to the Chesapeake Bay through P2. B4B provides mentoring assistance, training, recognition, and award opportunities. There are 960 participating facilities in the Bay watershed, and Virginia has 395 of those. For more information on *B4Bay*, reference http://www.deq.state.va.us/p2/b4b.

Mercury Reduction is one of the EPA's targeted "Priority Chemicals", posing a great risk to the environment and the public. The VA DEQ works to promote and coordinate voluntary efforts to reduce or eliminate the use of mercury containing products. DEQ has coordinated a series of reduction efforts for mercury-related industry sectors, such as dental offices, schools laboratories, thermometers, fluorescent lamps, automotive switches, and thermostats. For more, see http://www.deq.state.va.us/p2/mercury.

Virginia Green is the DEQ's voluntary initiative to promote pollution prevention (P2) practices all aspects of Virginia's tourism industry. *Virginia Green* is run in partnership with the Virginia Tourism Corporation and the Virginia Hospitality & Travel Association. Virginia's "lodging" sector was the first to be piloted in 2006, and there are now more than 75 facilities who have met the minimum criteria for Virginia Green. In 2007, guidance and minimum criteria were developed for the following sectors: Convention Centers, Restaurants, Attractions, Travel Organizations, and Conference Centers. To date, more than 100 organizations are now participating in this initiative. For more information, see http://www.deq.virginia.gov/p2/virginiagreen.

Virginia Information Source for Energy (VISE) is the DEQ's project to promote energy efficiency, conservation, & renewable energy technologies. DEQ provides for free energy efficiency assessments and maintains a website on energy-related technologies at **http://www.deq.state.va.us/p2/vise**.

The Virginia Regional Environmental Management System (VREMS) is an innovative pilot partnership linking federal, state, local, and private facilities in the Richmond regional area that are all in the process of developing Environmental Management Systems (EMSs). VREMS has proven to be a cost-effective, information-sharing tool for its participants; and the structure is now being copied by other regional EMS groups in Virginia and even nationwide. VREMS itself has an EMS structure and is working on various regional concerns, such as stormwater management. For more on VREMS, see http://www.vrems.org/.

For more information on DEQ's P2 and EMS programs, contact Tom Griffin at 804-698-4545 or rtgriffin@deq.virginia.gov.